

NTUMUN 2021

STUDY GUIDE



UNEP



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UN ENVIRONMENT PROGRAMME

CHAIR INTRODUCTIONS

HINO SAMUEL JOSE

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Hailing from Jakarta, Jose is an undergraduate of International Relations from UPN Veteran Jakarta. Jose has been doing MUN since 2018 and until now he has served either as a chair or as a delegate in 40+ online and offline MUN conferences. Jose believes that MUN can be used as a pathway to achieve higher even beyond the essence of MUN itself. Jose loves to participate in MUN as he is fond of security, development, environmental, and human rights studies - which made him to advocate these studies either through his volunteering and or through organizational experiences. He is currently holding a position as the Head of Research and Analysis in Agrata Institute Indonesia. He is honored to serve as the Chair of UNEP and Jose is looking forward to welcoming and facilitating all delegates in NTUMUN 2021! Although it's virtual, don't let your hype down and let's strive for the best!

DHIFAN KEMAL AKBAR

(Asst CHAIR)

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Dear delegates, returning and new, welcome to the UNEP of NTUMUN! My name is Dhifan and I am currently majoring in mechanical engineering in Indonesia. It is my absolute pleasure to chair this council alongside Jose and Kaley. Get ready to step into a 3-day-long life changing experience as you will discover, learn, connect, and obtain achievement. You will unveil aspects of your personality and skills you did not know you had. You will embark on a learning experience filled with challenges, friendship, knowledge, diplomacy, and leadership. This may lead you to the highest peaks and the brightest projects. For achievement, now that is something you will have to tell me. What will it be, delegates? Will you help diplomacy prevail? Or will you let it slip from your fingertips? I look forward to witnessing the remarkable conference as you fight your way for the environment. It will be my highest pleasure to assist you in this unique endeavour!

KALEY LIM

(Asst CHAIR OF UNEP)

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Dear delegates, I wish you a warm welcome into UNEP here at NTUMUN. I am Kaley from Singapore and am currently studying in one of the institutions here in Singapore. A fun fact about myself is that despite my short stature, I enjoy eating a lot and find great pleasure in consuming food from all different cuisines. Fret not if you feel intimidated coming into this MUN; I will do my best to not just ensure a conducive environment for all to proceed with MUN, but also to help delegates feel comfortable here to both grow and forge bonds with each other. With this, it is certainly an honour for me to be able to chair your council and I look forward to seeing you and hearing your debates during the conference.

WELCOME LETTER

Dear delegates, welcome to the UNEP ! Here you will learn more about environmental diplomacy in achieving the sustainable development goals. The board of directors hope that we can have a substantive, immersive, fruitful, and engaging discussion! The chairs expects the delegates to read the study guide thoroughly in order to achieve the intended goal setting that the chairs have elaborated within this study guide, so the debate can be specific, organized, and qualified for your development as a person in this kind of learning process. We welcome your fruitful solutions and deliberations on this issue and happy research-ing!

Best Regards,

BOD of UNEP NTUMUN 2021

Jose, Kaley, Dhifan.

UN ENVIRONMENT PROGRAMME

INTRODUCTION TO COUNCIL

The United Nations Environment Programme (UNEP) is one of the program committees existing within the UN system mandated to address thematic environmental concerns and also doing policymaking and establishing assistance programs for the developing countries to implement environmentally sound policies with its best practices. UNEP was established in 1972 as the proceedings of the Stockholm Conference and it was endorsed by the UN resolution 2997. UNEP itself focused on the main seven thematic areas, which are: climate change, disasters and conflicts, ecosystem, resource efficiency, waste management, and also for environmental governance.^[1] UNEP is also having their own special summit which called the United Nations Environmental Assembly (UNEA) which gathers annually guided by the infamous UNEP Middle Term Strategy (currently the 2018-2021 plan is in force) and all of the strategic actions from UNEP's program itself comes from the voluntary funding windows which comprised almost 95% of its funding source. UNEP also implements its 4-year periodical review along with the UNEP's The Biennial Programme of Work and Budget. These strategic plans will become a benchmark for UNEP to understand its direction and core concerns that will be consulted with member states.

The Programme of Work in UNEP presents and stands as the principles, objectives, strategy,

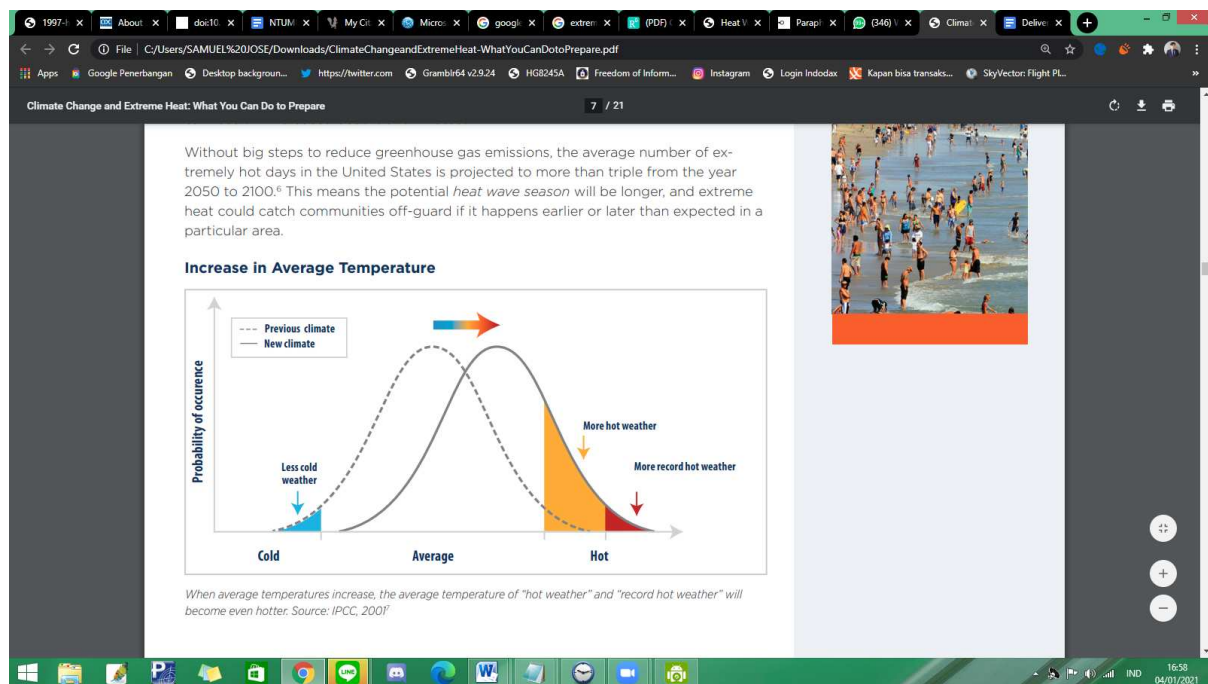
results framework and resource requirements of executive management, the seven sub-programmes and the programme support functions. UNEP emphasizes their operations on the principle that all possible actions such as raising public awareness, multi-stakeholder consultation, and 10-Step Roadmap Guide for governments can be sustainable to help the policy-making approach to the environmental issues and the decision-making process. The United Nations Environment Assembly as the decision-making mechanism in the agency provides universal membership for all 193 UN member states to negotiate, stipulate, implement, and set the international environmental solutions and develop it to be sustainable in accordance with the relevant international environmental law.^[2] As part of the UN system, UNEP is also taking part with the UN High-Level Panel on System Wide Coherence and adhere to the Environment Funding Windows and the Earmarked Funds to replicate the implementation of their programs and action, partnership with stakeholders such as the European Union, private sector, GEF, GCF, and others are also incorporated with UNEP's vision – which right now currently uphold the notion of sustainable development goals.^[3] After the decision making, UNEP cooperates and coordinates with UNDP in each member state to assist the technical implementation of the assistance program in the environment to the related member states.

TOPIC 1: DISASTER MANAGEMENT OF EXTREME HEAT EVENTS

SUMMARY

Extreme heat is one of the natural disasters that's occurring in certain countries with certain geographical and climate dynamics. The hotter temperatures compared to the summer has always imposed either health/other dimensional risk to the population itself. Historically, the extreme heat events were recorded as one of the natural disasters with higher mortality compared to the hurricanes, floods, earthquakes, and tornadoes combined particularly in the western hemisphere countries.^[4] Along with the rising GHG emissions and the warming temperature of the atmosphere, it's clear that this has exacerbated the unsustainable status quo – which is also correlated with lacking preparedness of governments in anticipating the heatwaves and public exposure to the hazard. Not only that, the extreme heat events themselves are also entrenching themselves to the rising contribution of the heat-illness and chronic disease that may come with every

individual case – which eventually leads into the public health emergency concerns and other possible collateral damages. Diseases such as heat stroke, nervous system abnormalities, delirium, fainting, nausea, paleness, anxiety, and other types of headaches also come with high risk symptoms and complications that adversely impact the elder population.^[5] This becomes not only as part of the climate change effects but also part of the human security spectrum. The medical interference to anticipate the heat-related illness is also obstructed by the fact that the pre-existing medical conditions from any individuals can be exacerbated and worsen by the heat-related illness, in which this will require the governments to be more both scientifically and medically sound when implementing the public health and protection guidelines and infrastructures during the heatwave season.



Picture 1: Temperature Dynamics During Extreme Heat Events^[6]

With the nature that this problem is pretty much natural, there is no possible solutions that could eradicate heat-events, thus it only opens to the question on how to mitigate the possible impacts and threats coming from heat events and also how to secure the earth from its rapid global warming to anticipate the worsening conditions of the heat events on its peak temperature. Hence the probable efforts may be concentrated on the efforts to do early warning to the vulnerable parts of the country in particular where awareness and infrastructure readiness may be less advanced compared to the urban areas. But not only that, the concerns such as readiness of health facilities, availability of the adequate infrastructure and logistical support to protect the children population, financial support packages for the workers who are exposed to heat from their activity, and both urban and rural management become the essential contentions when deliberating the said problem. Why should rural and urban concerns also be prioritized? The answer is quite simple, the hot temperature caused by the extreme heat events affects the hospitalization rate and also the distribution of 'risks' and vulnerability of the population owing to the differences of

rural and urban living conditions and usual activities – and this narrative is also correlated with the health facility distribution and capacity as the contributing factor.^[7] In economic means, the extreme heat events are also contributing to the lower trend of average income among business actors particularly the agriculture, dairy, and the smallholders with small financial capability or those who are classified as the lower-income populations.^[8]

Countries like the US for instance, do concern and scrutinize the extreme heat events and from that lesson in their status quo, . Therefore, the conclusion is, a sharp, timely, and collective effort from the governments and civil stakeholders engagement is needed to resolve the issue. Resolving extreme heat events will require profound efforts in the demographic concerns as the prevalence of the population's psychological vulnerabilities and other health factors such as heat-adaptation ability of certain population/ age groups. And this can be perceived as a scrutiny to create a productive society and enabling the environment to stay normal amidst the extreme heat events. Immediate remedy to the rising global temperature, efforts to reduce

mortality and morbidity, profound actions to the specific heat-response action plan is also needed to resolve the issues. And UNEP in this matter has the specific mandate to resolve the

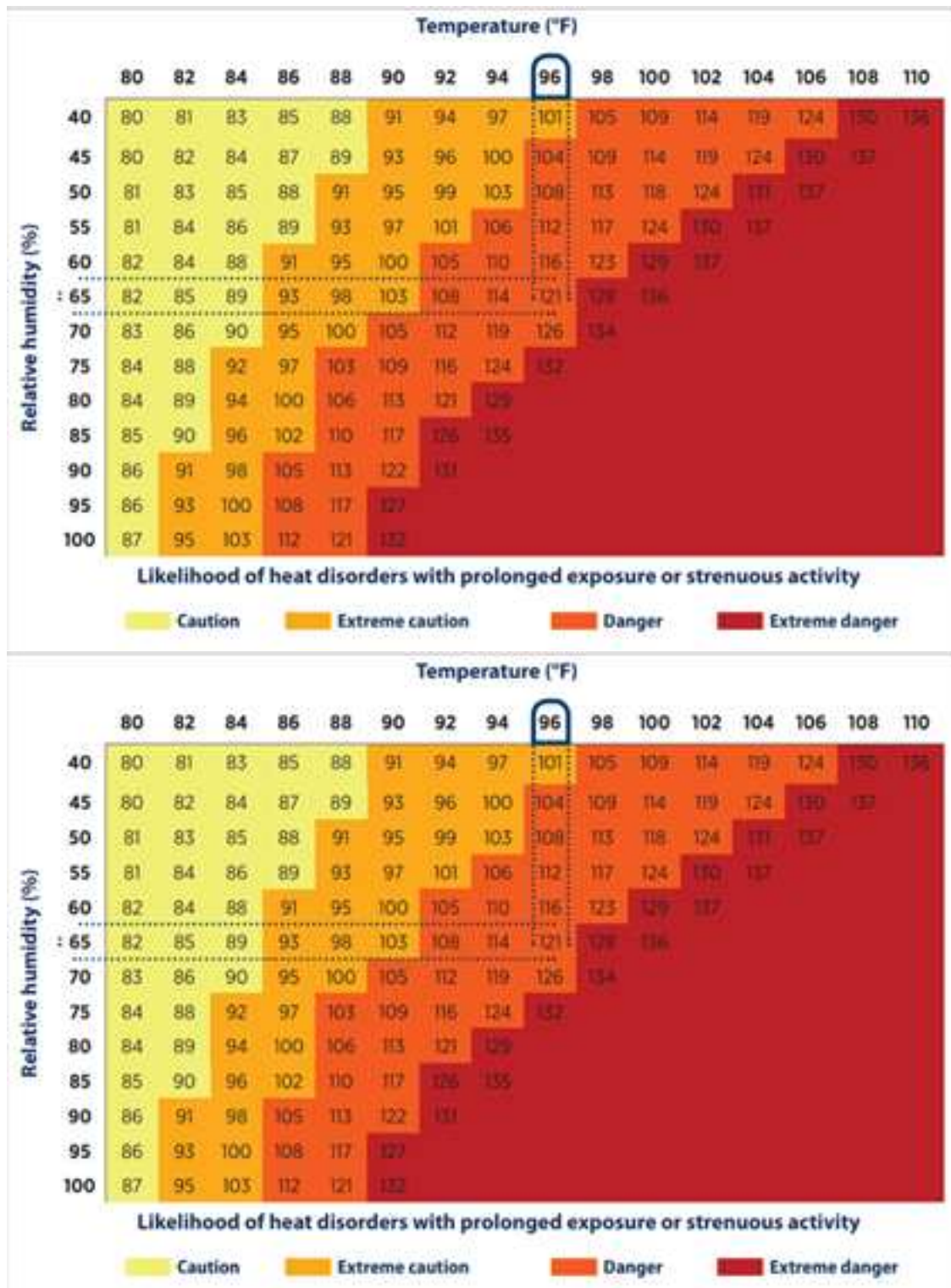
issue from an environmental context to tackle the multidimensional problems in the status quo in regards to the extreme heat events itself.

INTRODUCTION

1. EXTREME HEAT EVENTS

In general terms, an event can be considered as extreme heat when the weather condition reaches way above the average temperature for a long period of time and spreads to a large range of areas.^[9] The condition can be best described as more humid than normal, high minimum temperature during night, and stagnant warm to hot air in massive quantities of air masses. This event is a result of the ever-accelerating climate change and global warming that is impacting the weather conditions.^[10] The collective harmful activities from society that emits hazardous substances to the environment and causes a steady

increase in global temperature is mainly to blame.^[11] Just like the famous saying though, “What goes around, comes around” The impact of extreme heat affected the cause itself. This event is somewhat harmful and even deadly for people causing many casualties and leaving others extremely ill with complex complications such as unconsciousness, dry skin, nausea, altered mental state, and many others.^[12] Other than that, it can also cause damages to buildings or the natural landscape and the surrounding ecosystem leaving slow adapting animals to go extinct faster.^[13]



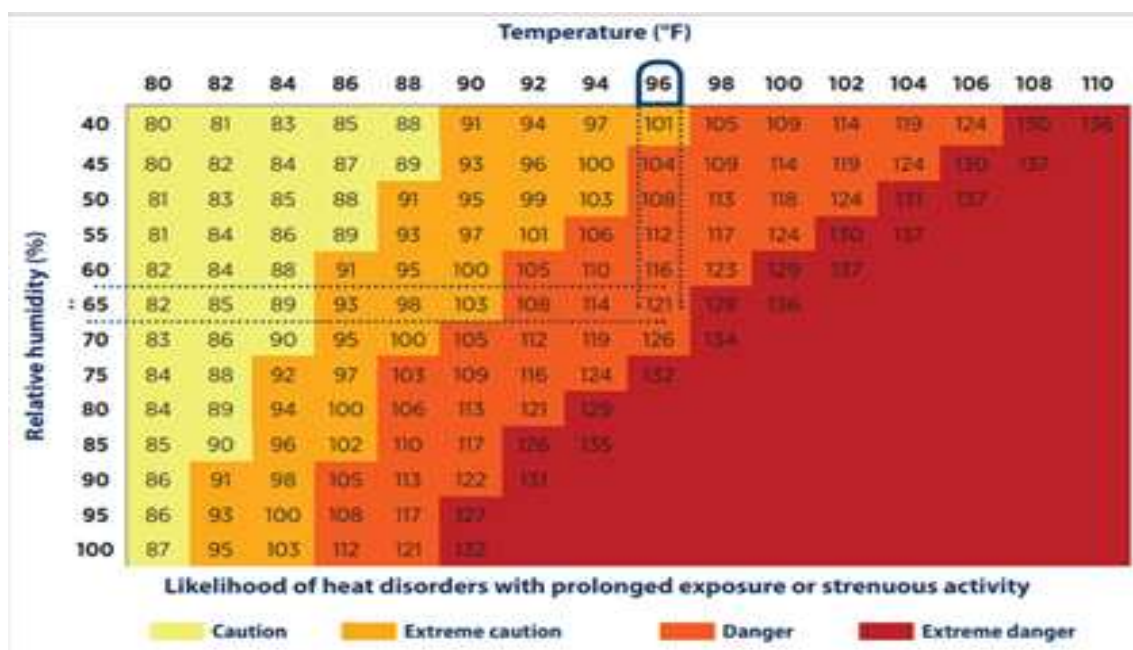


Figure 1. Heat Index Chart^[14]

One way to measure the danger of extreme heat events is by heat index. The heat index is a standard chart that can describe how dangerous the weather condition can get with attributed quantity from temperature and humidity. The above graph shows in colour-coded with dark red being the most dangerous condition while light yellow shows the contrary. It explains that as the relative humidity (y-axis) and temperature (x-axis) each increase, they combine to create a heat index able to describe the condition and classify them relatively to the danger spectrum. However, different regions experience different extreme heat events due to many different factors such as location (the geographical place) and time of the year.^[15] This creates a unique outcome from the extreme heat events according to each region's characteristics that will be elaborated below.

For example, based on data provided by the JRC Technical Report to the European Commission. The report recorded extreme heat events which took place in July 2019, where temperature reaching a record breaking of 40°C for the very first time.^[16] The event took place in Western Europe involving France, Western Germany, Northern Italy, Switzerland, and Eastern UK to suffer many fatalities up to

more than thousands of people.^[17] Even though the impact of this event causes injuries and death to living beings, however, it does not spark fire, drought, or any other major natural disasters.^[18] If global warming fails to be decelerated and climate change continues to intensifies, with more intense extreme events occurring, this will have a direct impact on European population leaving many people prone to heat related illness such as heat exhaustion, heat cramps, and heat strokes or leading to death.

In Australia however, a study by the Climate Council of Australia concluded that the country is one of the most vulnerable to extreme heat events.^[19] The ecosystems, communities, and economy are being ravaged by floods, droughts, and bushfires. In addition, an estimated 50% of the entire coral population has been lost on the Great Barrier Reef from events caused by marine extreme heat.^[20] In the recent extreme heat event, 10 million hectares of land have been destroyed to the ground due to the recent bushfire caused by the extreme heat.^[21] This heavily harms many animals as their habitats were destroyed and people living around it leading to respiratory related disease.

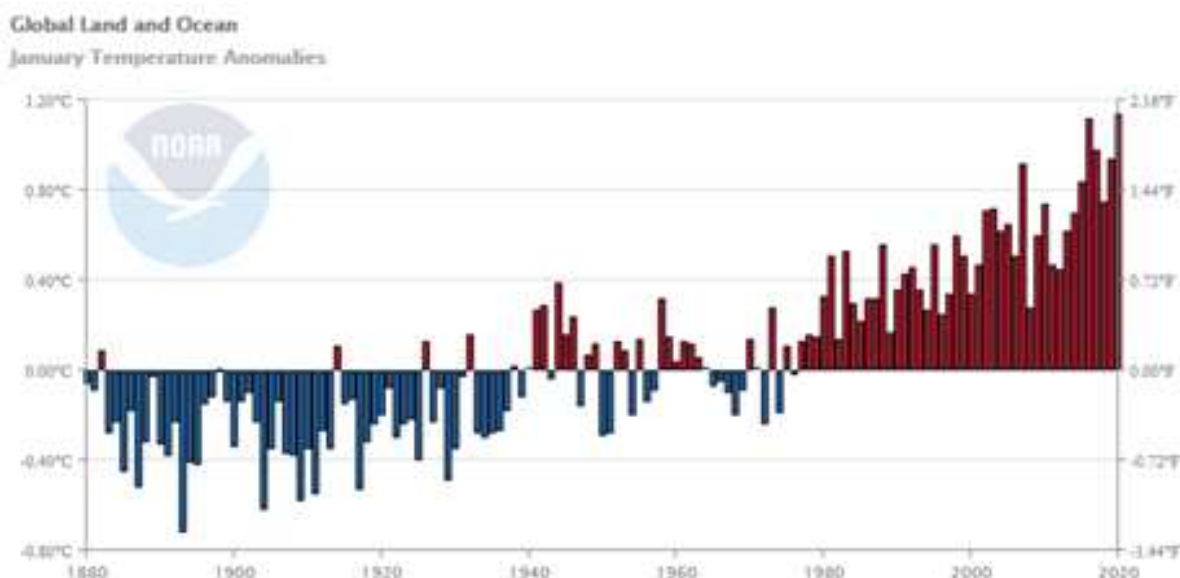


Figure 2. The Annual Average Temperature Globally^[22]

By looking at the current rate, temperature will continue to rise as long as people are still contributing and adding more greenhouse gases to the atmosphere. Many studies even conclude that heat events will become more common and years to come will never be cooler than the current year.^[23] More heat related illness will have an increase in number, especially if the society doesn't take steps to adapt and make a plan.

A better understanding of the future changes in temperature can better identify the occurrence of extreme heat events prior before happening. A study investigating future forecasts of extreme heat events at global

scale and evaluation of data obtained from previous extreme heat related disasters will be a good way to start in order to formulate better disaster management. Hence, policymakers will be able to make a more direct recommendation and strategize a plan to better manage disaster from extreme heat events. Also, in order to pull off a successful disaster management, it requires cooperation between many stakeholders and a multidisciplinary field including but not limited to design sciences, economics, sociology, engineering, and more.

2. DISASTER MANAGEMENT

Through United Nations Office for Disaster Risk Reduction, the United Nations agreed on the definition and concept of disaster which is "A serious disruption of the functioning of a community or a society involving widespread human, material, economic, or environmental losses and impacts, which exceeds the ability of the affected community of society to cope using its own resources".^[24]

A disaster much like extreme heat becomes a global concern, mainly due to the complexity and impact to the society, economy, environment, and many other sectors of the nations. In order to bounce back faster and sustain minimum damage from a disaster, there must be good disaster management. Disaster management can be defined in simple terms as the allocation of resources and responsibilities of people in dealing with humanitarian aspects of emergencies, in

particular there are three aspects of disaster management such as preparedness, response, and recovery.^[25] Hence, when looking to make concrete disaster management, many factors and stakeholders must be analysed in each of the steps such as the following;

a. Preparedness: the capacity of an area must be identified and measured. Then, funding allocation and jobs description can be distributed accordingly to the capacity of the region. This can reduce vulnerability and weak points to be able to resist better.

b. Response: in a case of an overwhelming event which resulted in mass number of casualties and damages, a collaboration is necessary. Hence, communication mechanism is one of the vital aspects to research more in order for collaboration to work in the first place.

c. Recovery: it is important to plan alternative resources as usually, resources are likely to be depleted after such a heat disaster. For example, heat may cause drought and therefore it is always wise to have a backup water resource to accelerate recovery.

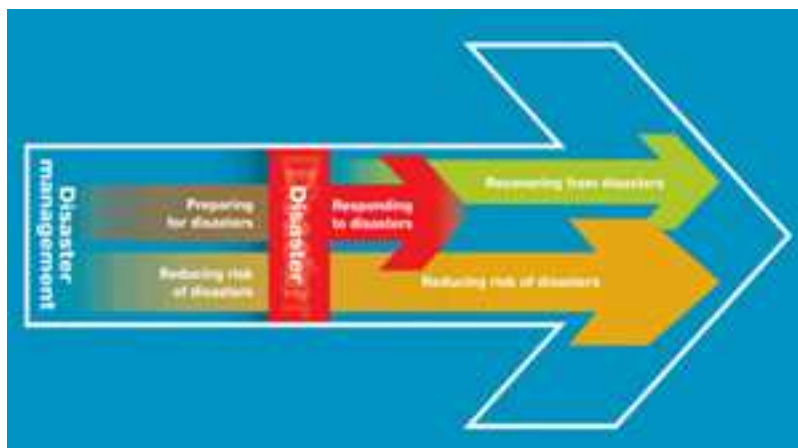


Figure 3. Disaster Management Scheme^[26]

Considering the extreme heat events that have been frequently occurring and the urgent need of better disaster management. It is now more than ever that we need to form innovative solutions and mechanisms to handle the disaster from striking.

BACKGROUND

Extreme heat events used to be something that rarely occurred in the past, but extreme heat occurs at a more frequent rate now. It has been speculated that extreme heat events are occurring at a higher rate than before because of global warming and human-caused climate change. According to a study by Union of Concerned Scientists in July 2019, there was an increase in dangerous heat index days due to higher temperatures and levels of humidity. This meant that in the US, days with high heat index temperatures will triple by 2050 ^[27]. Another research by Swiss Federal Institute of Technology in Switzerland concluded that cities' climates will shift 600 miles by mid

century and in 2050, Minneapolis' warmest month will increase by more than 10F ^[28].

Such events can result in unwanted consequences such as wiping out the majority of global coral reefs and vulnerable creatures, losses in agriculture, more intense wildfires, longer fire season, lower worker productivity, unbearable humidity and more. Just in 2003, around 70,000 deaths were caused by the European heat wave. 7 years later in Russia, 56,000 deaths were caused as a result of a heat wave. These imply that we will have to bear even more impactful consequences in the future when extreme heat events become more common in the world. ^[29]

Hence, it is of urgent importance that extreme heat events can be managed well in order to cushion the impacts of such events, or even to prevent and prepare people to be more equipped in dealing with such extreme heat events. Previously, countries and regions around the world have tried implementing measures and guidelines as well as effecting changes to their environment in an attempt to respond to the growing frequency of extreme heat events.

For example, more trees and vegetation have been introduced to the surroundings along with green roofs which have a vegetative layer above the roofs to help low surface and air temperature through providing shade and cooling by evapotranspiration. They also reduce stormwater runoff as well as protect the area against erosion. Apart from this, there have also been guidelines, systems and emergency response arrangements set up to both educate people on the basics of extreme heat events as well as how they can respond to it themselves and protect against them, and as a preparatory measure to be more ready in the future when there are extreme heat events. Furthermore, studies and probabilistic risk

analysis have been done and are ongoing to research on how each region can better prevent and manage extreme heat events.

Typically, such research management efforts tend to be integrated with local knowledge and more advanced scientific as well as technical knowledge so that local events can be managed in a way that suits their community instead of trying an one-size-fits-all approach which may not work for them. For example, in Phoenix, Arizona where there are homeless populations who are very vulnerable to extreme heat events, there are cooling centres for them. These areas are cool and shaded areas where they can rest inside; some even have food, clothing or showers. Such a measure would not be as needed in other countries where homeless populations are significantly lesser, such as in Japan which is a country with the smallest share of homeless people at 0.004% of the population in 2019, according to OECD.org.^[30] While there have already been efforts to tackle the issue of managing extreme heat events, there is still space for more to be done on this topic that is rising in importance and frequency.

DEFINITIONS

1. Extreme heat events - period consisting of days which are untypically and abnormally hot
2. Disaster management - organisation, management and utilisation of resources and duty in responding to emergencies resulting from disasters; in the context of extreme heat events
3. Urban heat effect - the occurrence of a city area being of a higher temperature and humidity than rural areas
4. Resilience - the ability to recover quickly from difficulties.

ENVIRONMENTAL CAUSES, EFFECTS AND CONCERNS

Extreme heat events are primarily caused by humidity and temperatures which happen to be higher than usual for a particular time and place. Although extreme heat events are neither unusual nor preventable, they have continued to become more common as a result of the increase in greenhouse gases being released into the atmosphere. Greenhouse gases have the ability to trap heat, which is what contributes to extreme heat events where temperature of a certain area will increase greatly and increase the probability of extreme heat events occurring. Climate change has made extreme heat events 93% more likely to happen, and more severe.

^[31] Climate change is also due to the buildup of greenhouse gases in the atmosphere, which traps heat and makes the area more prone to experiencing extreme heat events.

The occurrence of extreme heat events also tend to indicate that there is poor air quality since heat waves are usually as a result of having stagnant air, increasing air pollution. Where there is high heat and poor air quality such as having high levels of ground-level ozone to trap heat, it could lead to extreme heat events. One main contributing factor to greenhouse gas emissions is the increase in use of air-conditioning. Warmer average temperatures would most likely increase the public's usage of air-conditioning in an attempt to stay cool. However, this requires a lot of energy garnered from the burning of fossil fuels, hence highly contributing to the increase in temperature. This leads to a cycle where the future of reducing greenhouse emissions is traded for momentary comfort.

Urban heat island effect ^[32]; the effect whereby a developed city is often at a higher temperature than its rural surroundings. Instead of following how temperatures are cooler at night, Urban heat islands are of a higher daytime maximum temperature and

smaller change in temperature in the evening. In an urban heat island, vegetation is scarce and more of the area is paved or occupied by buildings which absorb rather than reflect the sun's energy. Hence, temperatures around these areas are higher. On the island, there are also tall buildings and narrow streets which cause air to be more stagnant, trapping more heat during the day by the sun, vehicles, factories and air conditioning vents. These provide the necessary factors required for extreme heat events to occur, proving to be more common with the rapid development of such islands. Furthermore, higher temperatures provide a favourable medium for the reaction between nitrogen oxides and reactive organic compounds, forming ground-level ozone, which as mentioned above, further traps heat.

As a result of high temperatures, urban streams tend to be of a higher temperature than streams in forested areas; they also tend to rise in terms of temperature during stall storms. Aquatic life and species would be highly impacted, by negatively impacting their growth and productivity of aquatic life. They can reduce levels of dissolved oxygen, increase the rate of natural chemical reactions as well as release excess nutrients into the water, disrupting the aquatic ecosystem. It can be said that the factors that are causing extreme heat events to occur at a higher frequency are also related to global warming. In global warming. The release of greenhouse gases into the atmosphere prevents heat from being regulated optimally. Instead, heat is trapped rather than released from the atmosphere. As a result, ice caps are melting, sea levels are rising and heat waves are intensifying. Similarly, a common response of people to global warming would be to use air-conditioning to cool themselves. Global warming and the occurrence of extreme heat events have many overlaps, implying that a

part of the management of extreme heat events goes in tandem with the management of global warming.

Therefore, there are a multitude of environmental factors and effects that delegates will have to look into. Apart from looking at how the world is exacerbating the

issue of extreme heat events occurring more, they also have to take into account the environmental effects such as the urban heat island effect. Parallels which can be drawn between extreme heat events and global warming can provide some insights into the angle at which delegates can look into the issue at hand and attempt to solve it.

HEALTH IMPACTS OF EXTREME HEAT EVENTS

Extreme heat events bring about extremely high temperatures, and such high temperatures at which a normal body might not be accustomed to might bring about undesirable symptoms. Heat cramps, heat exhaustion and heat stroke are a few of the most common health effects as a result of extreme heat events. Common symptoms include fatigue, sweating, headache and muscle aches. Since these symptoms are similar to those that one may get upon falling ill, it can be difficult to distinguish between a heat emergency and something small that will resolve on its own. This is what makes extreme heat even more threatening because of the nature of its symptoms. Sometimes, the heat can also impair judgment and hence impede their ability to make decisions and assess if their health is in danger, making it even more dangerous for people's health. Although the symptoms may not seem to be life-threatening, they can eventually worsen and even cause death. In fact, from 2006-2015, the leading cause of fatalities by hazard was heat at 1130, among other hazards such as tornadoes, floods, winter storms and hurricanes ^[33]. This number is estimated to be lower than the actual number, as many deaths that were caused by extreme heat were not identified and hence may not be recorded on their death certificates. An example of this would be during the 1995 heat wave in Chicago, where only 465 deaths out of 700 deaths were recorded to be caused by the extreme heat event, showing the potential for the fatalities caused by extreme heat to be much higher than expected.

It is hence of utmost importance that those who are vulnerable to such extreme heat events be educated on how to recognise the symptoms of heat problems and what to do in such emergencies. Such people include: homeless people or people who live alone in housing without air conditioning or cities likely to have urban heat islands effect, people with certain health conditions such as heart diseases or mental illness or take certain medications to treat such conditions, people under the influence of drugs or alcohols, athletes who train and compete outside, people who work outside or inside without air conditioning, infants, young children, pregnancy women and people older than 65 and people who have mobility issues, are obese or bedridden. These people range from those who may not be able to respond effectively to extreme heat events, to those who are at higher risks of experiencing the impact of extreme heat due to high exposure and/or sensitivity.

Furthermore, as extreme heat events tend to affect a huge part of the population at a time, it is important to consider the ability of the community to: prevent, respond to, and manage post-disaster. This is especially so in communities where medical resources are scarce, or only accessible mainly by those who have a higher spending capacity. There are also rural areas which can be more susceptible to extreme heat events, proving a greater need for countries to figure out how they can better manage extreme heat events in these areas, even more so when health resources are not enough to go about in areas where most

people are concentrated. In the case where they are unable to allow for everyone to seek medical attention, they would need to find alternatives to ensure that their residents and citizens stay safe and are sure of what they should do in such extreme circumstances regardless of their status, occupation, residential area and others. In other words,

ECONOMICAL ISSUES

Although the impacts on the economy of extreme heat events may not be clear, they are also important to factor into consideration as they do affect others. Based on a study conducted on farming in Nepal from 2012 to 2017, it has been reported that 84% of farmers had self-reported moderate or severe heat stress during those years. ^[34] Severe heat stress here refers to both the health and labour productivity. During these years when around 50 cases of heat waves were experienced, 37% had experienced heat-related health problems, with 48% responding that their health condition had deteriorated as a result of the heat waves. When weather conditions are unsuitable or even hazardous to the health of farmers, they were found to have worn hats or used umbrellas, rest in shades, slow or stop their work during extremely hot days. Such weather makes it difficult for farmers to continue with their job, causing productivity to be slower and less work to be done which could impede their ultimate goal of growing good crops.

On another hand, crop growth is also affected. For example, crops usually grow best under a certain temperature, and when there are extreme heat events, their growth may be greatly hindered. At temperatures above the

countries also need to take into account those who will not be able to seek shelter as a result of extenuating circumstances such as being homeless. As extreme heat events directly impact the health of people, this is yet another crucial area to look into in the management of heat events.

optimum temperature, rates of biochemical reactions in the crops will not be able to proceed normally, even causing death of the organism. High temperatures can also cause plants to take in more water, and since farmers are unable to work as per usual due to the high heat, they may not be able to supply enough water to their crops in order to prevent the crops from being dehydrated. In areas of the world where agriculture is what they depend on for their economy, extreme heat events pose a huge financial burden for them.

Additionally, costs will be incurred in the process of responding to extreme heat events. In the US, it cost them about \$3.3 trillion in 2016 to respond to the health impacts of extreme heat. This is simply 18% of the US economy. ^[35] Extreme heat events also cause loss of labour, resulting in loss of wages on the employees' part. Other demands for energy to cool the people could even amplify heat waves, as well as causing a significant increase in the expenditure of people as energy is not necessarily easily obtainable nor cheap. The different ways in which extreme heat events impact the economy and financial aspect of countries should also be taken into account when managing such extreme heat events.

KEY STAKEHOLDERS

Some important UN organizations are the United Nations Office for Disaster Risk Reduction (UNDRR), United Nations Human Rights Council (UNHRC), United Nations Human Settlement Programme (UN-Habitat). However, beyond the United Nations itself and member states governments, there are other persistent and innovative parties that are planning or even helping to implement such disaster management especially in a case of extreme heat events. These stakeholders may be useful to look into for future collaboration or solutions to the aforementioned issues. These parties not only directly work towards improving disaster management for extreme heat events, but also interact with communities creating awareness and building trust to ensure the safety of the society. Below are some non-UN stakeholders that are relevant to this topic.

1. INTERNATIONAL DEVELOPMENT COMMUNITY

Referred to international and regional development banks such as but not limited to World Bank Group (WBG), Asian Development Bank (ADB), Inter-American Development Bank (IDB).^[36] These multifaceted organisations traditionally work with finance and development ministries in middle- and low-income nations to provide various development loans and grants, while simultaneously offering education in a form of technology services, expertise, and advice. These parties have steadily mainstreamed DRR and climate change into their development work plans to better play their role in financing and transfer facilities and programmes in the most prone countries for disasters especially the most frequent disaster which is the extreme heat events. ^[37]

On the other hand, it also referred to international development agencies such as but not limited to the United States Agency for International Development (USAID), The UK Department for International Development, and more. They have been the biggest donors of funding for countries in need of support after a disaster.^[38] The donors would include humanitarian budgets that go through global and regional development banks such as Global Environmental Fund (GEF), Green Climate Fund, and others. However, the amount of donations has been uncertain due to the shift in objective that these parties have. They are now focusing their donations to DRR and risk transfer capacity development, climate change adaptation and mitigation of disaster.^[39]

2. NON-GOVERNMENTAL ORGANIZATIONS AND CIVIL SOCIETY ORGANIZATIONS

There are different types of organizations with distinctive objectives and backgrounds such as but not limited to International Red Cross and Red Crescent Societies (IFRC), The Rockefeller Foundation, Save the Children, Oxfam, The Nature Conservancy (NGO), Environmental Defence Fund (NGO), Geneva Association (Knowledge Based Think Tanks), and World Business Council for Sustainable Development (WBCSD).^[40] These parties have been increasingly active and engaging in a variety of activities and aspects of disaster management respectively depending on their mandate and functions. Some include the ability to influence policy, advocacy, raising awareness, assisting in the implementation of disaster management post extreme heat events, communication, building capacity, and encouraging the involvement of local government participation in their community-

based solutions for better disaster management of extreme heat events.

3. SCIENTIFIC COMMUNITY AND ACADEMIA

The United Nations Environment Programme plays a huge role in coordinating international scientific. UNEP along with other UN-related bodies such as but not limited to the Intergovernmental Panel on Climate Change (IPCC) and allies have connected scientists and academia around the globe to conduct joint research.^[41] The outcome of the collaboration usually results in a much concrete framework such as the Sendai Framework and other several guide books. Beyond the internationally coordinated research however, numerous academia communities, research labs, and international engineering associations have engineered and innovated dedicated programmes to natural related activities, or in this case disaster management in extreme heat events.

4. SOCIO-ECONOMIC GROUPING

Intergovernmental organizations such as the G20, the Asia-Pacific Economic Cooperation (APEC), the Association of Southeast Asian Nations (ASEAN), the South Asian Association

for Regional Cooperation (SAARC), and the Caribbean Community (CARICOM). They are one of the critical platforms for governments to discuss disaster management, climate change, and sustainable development issues since most of the member states have similar geographical condition, climate condition, political interest, socio-economic condition, and other aspects that are crucial to successfully conduct disaster management.^[42] For example, the Asia-Pacific Financial Forum (APFF) activities that are responsible for Disaster Financing in their region, making sure the budget allocation is in considerable range and matches with their functions.

5. INSURANCE INDUSTRY AND ITS AFFILIATES

The Geneva Association is one of the examples that would fall under this category. This association is leading in the international insurance think tank for strategic insurance and disaster management issues^[43]. Insurance industry and key decision makers both national and international levels are able to dialogue through this and seek development of programmes. Different from the other body, the Geneva Association acts as a catalyst for progress in the understanding of disaster management and insurance matters and acts as an information creator and disseminator.

QUESTIONS A RESOLUTION MUST ANSWER

1. What are the best unilateral-based approaches to the problems? And how to preserve the best practices in resolving the extreme heat events by relying and upgrading the national capacity?
2. What are the mechanisms to establish pre-emptive actions from the national government prior to the possible occurrence of extreme heat waves?
3. In order to create a plan for disaster management, do non-state actors such as but not limited to environmental-related NGO, MNC, and others have their involvement throughout the process? If so, to what extent and how long should the involvement be?

4. To what extent should governments intervene in the management of other external factors that could cause extreme heat events?
5. What are the best environmentally-sound climate change solutions to remedy global warming effects in the context of extreme heat events?

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TOPIC 2: REDUCING THE CLIMATE IMPACT OF THE FAST-FASHION INDUSTRY

SUMMARY

The fast fashion industry keeps consumers in the cycle of impulse buying and barely wearing what they bought again and again. The way that it is designed is for new designs to be churned out and produced at a fast and constant pace, supplying consumers with a never-ending stream of new clothing pieces to purchase. Since the clothing pieces are easily available in large quantities and are easily produced, they are also sold at a very low price which makes it even more eye-grabbing for consumers. It is then not a surprise to the world that the fast fashion industry would be a growing industry. However, as efficient and attractive as this may sound to the consumer, such a cycle is detrimental to our environment.

This industry emits 1.7 billion tons of carbon dioxide yearly; results in 25% out of 150 billion ^[1] new clothing items remaining unworn; produces over 92 million tons of waste and consumes 79 trillion litres of water per year ^[2]. This makes the industry, second largest polluter on earth, more harmful to the environment than that of the aviation industry, as it accounts for 10% ^[3] of global pollution. When these clothing pieces are delivered and transported around by air rather than by sea,

they also cause more pollution due to the higher demand for cargo flights to bring these clothing pieces around globally. Apart from creating waste, consuming a large amount of water in spite of our race to save our water reserves, polluting our waters with the toxic waste generated from factories that are not handled properly, the industry even pollutes the air more with its relations to the aviation industry.

Among the wide range of negative impacts that the fast fashion industry has brought about, the main impact that we aim to reduce is its impact on our climate. Such impacts include, but are not limited to, increased heat, drought, reduced agricultural yields, health impacts, flooding and erosion. These impacts mainly stem from the pollution, waste generation and excessive resources being consumed by this industry. As they are triggering signs that our planet's environment is deteriorating, we need to come up with solutions to preserve and protect our environment - to reduce climate impacts of the fast fashion industry. Therefore, reducing the climate impact of the fast fashion industry is of urgent and utmost need.

1. FAST FASHION INDUSTRY

Fashion has existed long before the eighteen hundred. In the simpler time, one must process and source materials such as but not limited to wool and leather then prepare and weave them into garments.^[4] Fashion industry operates and employs workroom employees along with garment workers. This concept would later on lead to the growth of 'sweatshop' where work conditions are

unbearable and efficiency is not that great.^[5] However, due to the industrial revolution and the invention of modern-day technology such as but not limited to semi-automated textile and sewing machines, this enables industries to mass produce clothes-ready products in a short amount of time. Because of the efficiency, this resulted in lower cost production which leads to cheaper, easier, and faster clothing.



Figure 4. Primitive Fashion Industry (Left), Modern Day Fast Fashion Industry (Right)^[6]

Before the twentieth century, many fashion industries still operated under the concept of 'sweatshops' which produced clothes based on seasons. Designers would try to forecast demands and come up with designs that seemed fit. This resulted in costly clothing and slow production rate. Until the 1970s that is, this method changed significantly due to the younger generation starting to create new trends which use cheaply made clothing and modify it themselves as a form of self-expression.^[7] This trend has made the fashion industry unable to keep up with the demand for cheap clothes. Fast forward to the 2000s, for the very first time, the fast fashion industry introduced cheap clothing in massive quantities that is in the range of affordable in any class of society.^[8] Fast fashion retailers such as Zara, H&M, Topshop and Primark were booming in most of the regions. The fast fashion changed the competition in the market as they are able to examine and replicate the

looks and design elements from runway shows and top fashion houses and quickly reproducing them at a large quantity with low price.

The real origin of the fast fashion industry is debatable, however, there is some evidence which leads to one particular business which helps start and popularize the concept. The founder of Zara which is Amancio Ortega founded his company in 1963 and featured a product that is the exact replica of high-end design in an affordable manner.^[9] In 1975, Ortega opened the first ever retail outlet in Europe.^[10] It didn't take him long until he moved to New York in the 1990s where many media have their eyes caught in his company.^[11] The New York Times described his store as "fast fashion" and stated that "it would only take 2 weeks for a garment to go from a design to being sold". Many other experts also acknowledge the brilliant concept which is to

build a supply chain and production network that can maintain the complicated and capital-intensive operations such as but not limited to computer guided fabric cutting, while outsourcing labour intensive operations such as but not limited to garment sewing to local subcontractors. Hence, since this concept birthed shorter lead time, the company would be able to respond from over sale or low sale products.

In conclusion, the fast fashion industry produces products in mass quantity, with the newest style and the fastest and most affordable product on the market. They optimize supply chain to create shorter lead time hence making the progress of designing and producing shorter so that products are able to be manufactured quickly and operations can be conducted at low cost. This led mainstream consumers to purchase current trend clothing at low price.

2. CLIMATE IMPACT FROM FAST FASHION INDUSTRY

Water use, energy consumption, chemical use, and waste production has been a trending topic among environmentalists. Not only that it directly degrades the quality of its surrounding environment but it also damages the living organisms around the industry and possibly everywhere else due to the climate change it impacted. Many stakeholders have tried to inject a greener mechanism to the fast fashion industries, yet it has not been applied successfully and universally by every fast fashion industry. The problem lies behind the lack of effort of the businesses and local government to push the agenda to better craft management systems and standardize mechanisms such as materials used,

equipment used, cradle to cradle system, circular economy, and many others. It is also the lack of incentives gained from implementing those greener methods or compensation of loss due to that businesses are profit oriented.

By analysing the impact of climate change made by the fast fashion industries from the supply chain. We can understand the core issue and be able to identify which aspects are needed for improvements. The climate impact from the fast fashion industries are as follows;

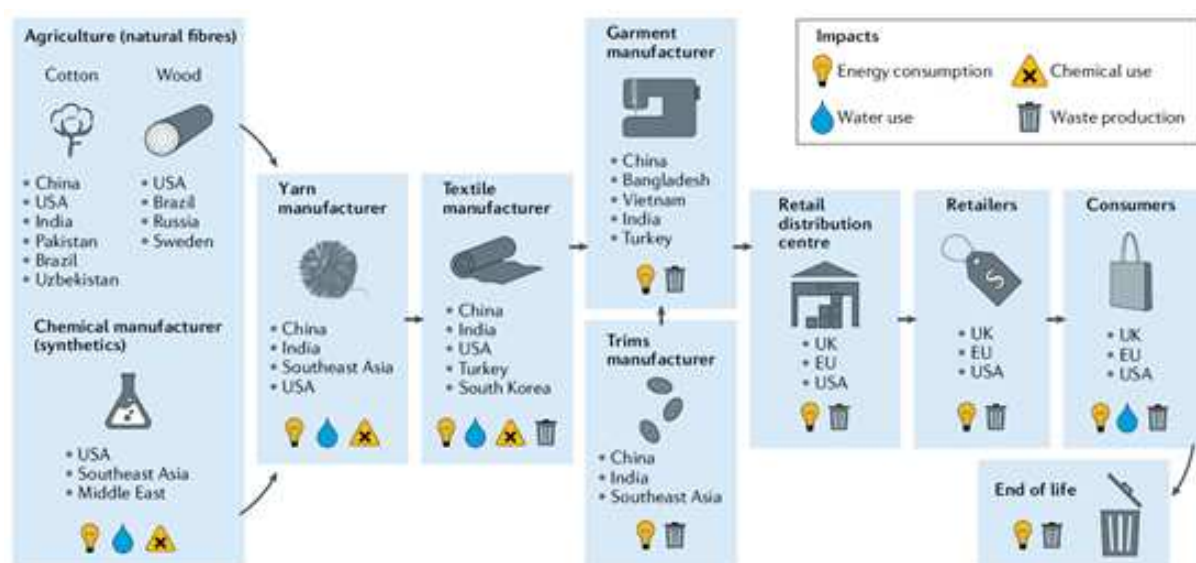


Figure 5. The Impact to Climate Change Seen From the Supply Chain of Fast Fashion Industry^[12]

1. Water use: in total the fast fashion industries used a whopping 79 billion cubic meters of water in 2015, averaging an estimated 200 tonnes of water usage during the production of one tonne textile.^[13] While current production takes up 44 trillion litres of water annually, most of the water is used in processes such as bleaching, dyeing, printing and finishing.^[14] With a large amount of water needed, it has been studied and reported that 20% of water in the Aral Sea is used for the industry.^[15] More reports also stated that 7% of global groundwater and drinking water are used annually in the industry, most of which comes from China and India, the water-stressed manufacturing regions.^[16] Beyond this, the industry impacted local water supply by draining their water waste to the local reserve. The water waste contains toxic chemicals that didn't get treated properly during the disposal and this water enters the local groundwater system, infecting the ecosystem as a whole, even humans.
2. Carbon footprint: textiles alongside aluminium generates the most greenhouse gasses per unit of material. The study conducted by the Intergovernmental Panel on Climate Change (IPCC) concluded that 10% of global greenhouse gas comes from fast fashion mainly from textiles.^[17] Other than that, the high carbon footprint contributed by the fast fashion industry also comes from their energy usage. Many industries are still using coal based as their fuel which worsen their contribution to the carbon footprint. Most of this is due to fibre extraction like acrylics which can take up to 160kWh per kg of fibre.^[18]
3. Chemical waste: the chemicals are used in most of the steps of the operation. From cotton crops to finishing the fast fashion industries use over 15000 different chemicals either to maintain the stability of cotton crops, cleaning the materials, colouring the products, and perfuming it.^[19] To the environment, agrochemicals leach into the soil decreasing the soil biodiversity and fertility, disrupting biological processes and destroying microorganisms, and the surrounding life.
4. Textile waste: the increased trend fast fashion industry also increases the trend of textile waste. Western countries traditionally handled textile waste by exporting it to the developing countries such as those in Africa. As more and more developing countries are banning the import of textile waste, developed countries would need to make alternative mechanisms. Knowing that the global textile waste averages to 25 kg per person, still we can find poor efforts in recycling activities and barely see green mechanisms being implemented such as cradle to cradle and circular economy.^[20] Closing the loop is needed now more than ever if the world plans to de accelerate climate change from fast fashion industries.

BACKGROUND

Dating back to the 1960s, the fast fashion industry started to gain acceptance and attention from consumers as they started to switch from traditional wear to clothing that

can be obtained at a cheaper price to suit their goal of being at the forefront of wearing trending fashion styles. Fashion styles change very quickly, which led to the demand for this

industry to become fast-paced and well-equipped in order to produce the clothing pieces in a certain timeframe to stay relevant and satisfy consumers. Slowly as retail brands such as Zara, H&M and Forever 21 fueled the fast fashion industry opened stores around the world, the fast fashion industry gained more recognition and support while leaving other stores that had a similar goal but were unable to deliver new clothing trends as fast to decrease in profits. Prominent figures such as Kate Middleton and Michelle Obama were even among the consumers of fast fashion, further leading to the increase in popularity of the industry.

Today, the fast fashion industry can be said to have been one of the most popular ways of obtaining clothes, as it is widely accessible and trendy, making it less guilty for people to impulse-buy due to the low prices.

However, this comes at a price: there are negative impacts on our climate. A lot of labour, carbon, energy and water are required to supply the fast fashion industry. Not only does the industry use up a lot of resources; they also deplete non-renewable sources, emit greenhouse gases and release toxic wastes leftover by factory processes such as textile dyeing into water bodies. All these effects are detrimental to the environment and can cause irreversible damage such as the extinction of species, depletion of natural resources, health hazards and global warming.

Furthermore, it is estimated that this industry needs to cut down on emissions by 2050, but it is predicted that its emissions would increase by more than 60% by 2030 [64]^[21]. This shows that the projected outcome of the world saving its environment would be negative if we continue on without making conscious efforts to reduce the climate impacts. A lot of waste is generated, at about USD 500 billion of new clothing, according to The Ellen MacArthur Foundation. This gives us a further insight into how the issue is pressing yet has room for improvement. Therefore, it is important that we start to take a deeper look at this issue and find solutions to it.

Now, consumers are starting to become aware of the environmental impacts of the fast fashion industry and some have made small changes to the way they manage their clothes. For example, some have been buying less, donating unwanted clothes to charity, or even buying clothes second-hand. These small actions are aimed at preventing waste - an issue because unwanted clothes that are thrown away end up in the landfills or are just burnt. All the resources and efforts taken to make those clothes that end up being for nought would be wasted.

On the other hand, policy-makers have a difficult time responding to this issue as it is complex; when a country imposes restrictions on factories, the company can offshore to other countries that are more lax on such regulations to avoid the law. In other words, restrictions on them would not be useful as they are usually able to escape such laws and result in the same consequences. However, policy-makers have been trying to tackle the issue from a bottom-up approach as it is an easier way to get consumers on board to help reduce the climate impacts, followed by companies responding to this change by producing less or more. Such approaches tend to be incentivised, so that consumers would be more willing to follow with their guidelines and directions. For example, Americans are eligible for tax deductions when they donate clothes to charity organisations, which are resold to low-income communities. This is, again, targeted at getting Americans to reduce the amount of waste that they can generate.

Despite the general bottom-up approach that is usually taken by countries, President Emmanuel Macron of France, Chairman and Chief Executive Officer of Kering Francois-Henri Pinault have brought together 32 fashion and textile companies to sign a pact. This pact aims to “bring together the leading layers in fashion and textile and reduce the environmental impact of the industry”, by tackling climate, biodiversity and ocean issues. This is a collective effort in making the industry less harmful and sustainable.

Manufacturers and designers have also realised the big role that they play in this issue, and have been trying to come up with alternative ways of obtaining resources for the creation of new clothing pieces. For example, Ecoalf which is based in Spain have been collecting ocean plastics from 33 ports and using the trash as materials for their shoes, clothing and bags. Not only can they lessen the impacts of water pollution, they can also

create items without generating more waste as their products are made up of wastes. Another example would be how Indosole, based in San Francisco and Bali, turns discarded tyres from Indonesia into shoes, sandals and flip-flops. These are both examples of how companies can use alternative sources of materials to prevent waste and use less natural resources such as fossil fuels and water.

DEFINITIONS

1. Fast fashion industry - an industry that capitalises on the rapid birth of fashion trends and clothing pieces.
2. Climate impacts - factors regarding the environment including but are not limited to: land, water and air.
3. Circular Economy - alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

SCOPE OF DEBATE

1. IMPLEMENTATION OF THE PRINCIPLE OF CIRCULAR ECONOMY MODELS IN THE FAST-FASHION INDUSTRY

Circular economy (CE) is the principle where the cycle of economy is based on a cycle where resources that are being used are endured as long as possible while also maintaining maximum benefits from the resource from the regeneration of particular service life from the cycle. CE replaces the common 'end-of-line' principle in the cycle and tries to eliminate waste as effectively as possible by promoting the notion of usage recylement within the business models and this concept has been commonly agreed by

several notable scholars.^[22] In particular, the principle of CE itself has always been promoted to be incorporated as the sustainable solution in the fast-fashion industry. For instance, the infamous Ellen MacArthur Foundation conveyed three main critical points when it comes to the reformation of vision that should be embraced to the fashion industry as part of the vital sector within the global economy – yet this has brought the urgency for the industry to be more sustainable. Those three key critical point are: (1) business models that increase

clothing use in the market while also promoting sustainability; (2) renewable inputs and outputs from the textile economy; and (3) recycling of old clothings into new on – and this is done to increase durability and innovation within the fashion industry.^[23]

It's pretty much evident that the CE model is a substantial step to break the unsustainable fashion industry that can be harmful to the environment, however a mere sustainable industrial cycle in the fast-fashion industry doesn't always mean profit in the cost and benefits. Therefore, innovation in this context should also be able to satisfy the

balance of both environment and economic concerns – especially pertaining to the fact that the industry is driven by profits and it makes the presence of an incentive mechanism for the fast-fashion industry to be considered more urgent to be implemented to drive innovation. Hence it also drives forward the importance of government's dedication as the decision-maker to have both clear horizontal and vertical measures to be embraced to their regulations and mechanisms that can enable such an environment exist to drive forward the innovation guided by a better regulation principle and evaluating the process and its impacts in the long run.^[24]

2. UNEP AND THE FAST-FASHION INDUSTRY

UNEP in fact, does support the implementation of CE within the fast-fashion industry to ensure the environmentally-sound policies and technical assistance can be incorporated into the production cycle. This notion is in accordance with the Global Environmental Monitoring (GEM) and other UN-relevant recommendations from UNEP and or any other UN agencies, think-tank policy brief, and other NGOs/ IGOs. The efforts itself mainstreamed the process where the fast-fashion industry can encourage lasting products for the ecosystem, and reduce carbon footprint from its process ranging from designing, reusing, and recycling of the fashion itself. UNEP in fact did implement several notable past actions that can be regarded as the pinnacle efforts in ensuring the sustainability of the fast fashion industry, the establishment of UN Alliance for Sustainable Fashion in March 2019 by the United Nations Environment Assembly is one of the tangible multilateral practices to address the unsustainable and destructive process of the fast-fashion industry. The alliance itself doesn't only include the governmental stakeholders but also the alliance of organizations and corporations valued for more than 2,4 trillion USD that promotes projects, policies, and initiatives that are aimed to reverse the negative impacts and transform the fashion

industry to be more sustainable and promote the competitive value of sustainable fashion industry.^[25]

United Nations does concur with the finding from Ellen MacArthur foundation where the fundamental problem existed in the retailers, where revenues by selling more fashion products also pushes the industry to create a new fashion collections simultaneously to meet the demands of the customers – hence this narrative became the main notion for the stakeholders to be realistic and encouraging designers, manufacturers, and the retailers to seek reform within the industry.^[26] Not only that, the United Nations in the past has also adopted the Fashion Industry Charter for Climate Action that supports the work of the IPCC to drive forward the sustainable fashion and support the achievement of the UN Climate Change Convention. The target within the charter stipulated that GHG in 2050 shall be reduced to below 1,5 degrees and reduce the GHG emission by 30% on 2030 to decarbonize the fashion industry with the science-based pathway initiative for the creation of sustainable fashion industry to scale up the efforts to combat climate change in the fashion sector.^[27] The charter led the establishment of the specific working groups as the solutions to

develop the further works to achieve the goals, the working groups are working in the following concerns: Decarbonization pathway and GHG emission reductions; Raw material; Manufacturing/Energy; Logistics; Policy

engagement; Leveraging existing tools and initiatives; Promoting broader climate action; Brand/Retailer Owned or Operated Emissions.^[28]

3. CONNECTING THE DOTS BETWEEN SUSTAINABILITY, ECONOMY, AND THE FASHION INDUSTRY

To conclude this part, then the urgency of the issue will be on how the governments could harmonize their policies in accordance with the UNEP's strategic past actions. The urgency and multidimensional demands brought by the presence of climate change has led countries to be more complying towards the internationally-agreed efforts. Hence, member states have the role to legislate and implement environmentally-sound policies to

the people and businesses to be greener and sustainable whilst keeping profits for the sake of the economy. And the commercialization of sustainable fashion industry should be empowered by cross-cutting policies so the businesses can still be incentivized. The aforementioned past actions are the key contentions in how countries should approach the issue at hand by balancing between the economy and environmental scrutiny.

KEY STAKEHOLDERS

The present business logic in the fast fashion industry is based on ever-increasing production and sales, fast manufacturing which led to low product quality and short product life cycle.^[29] All of this making consumption unsustainable, that is producing substantial waste and vast negative environmental impacts. Hence, paradigm change is very much in order and this needs both production process and consumption

attitude to be changed. In order for changes to be made and realised there requires involvement of all contributing stakeholders such as the fast fashion businesses, supply chain parties, consumers, and policymakers. There are many ways to approach this problem, and there are also many ways that every stakeholder can contribute and make a difference, such as the following ways:

1. POLICYMAKERS^[30]

Every level of policymakers can contribute very well to this problem as they can modify and update existing regulation to better fit the condition the society wants to achieve. Some of the solutions or a way out that can be recommended to the policymakers are green taxation, investing on tools for a

sustainable system in fast fashion industries, policy for producer responsibility, standardization of materials or equipment used in fast fashion industries, and many other aspects which can encourage businesses to be more environmentally friendly while simultaneously obtaining maximum profits.

Furthermore, policymakers can also engage in international forums to discuss potential policy recommendations for problems that arose beyond borders such as

the standard import/export of materials, distribution of products, and illegal disposal of clothing materials from developed nations to developing nations.

2. FAST FASHION INDUSTRY^[31]

The industry needs to improve sustainability and business needs to create alternatives models for fast fashion to lower its environmental impact. Implementing standardization or green models such as cradle to cradle or circular economy could lead to better sustainable businesses with better garment quality by mixing it with recyclable materials and longer product life time. Also encouraging industry to obey extended producer responsibility, in which producers and importers are responsible for product disposal and recycling by including waste as a cost for the industry and encouraging them to reduce overproduction. Other than that, businesses can also integrate or strengthen

their Corporate Social Responsibility (CSR) to reduce negative social and environmental impacts.

In conclusion, every actor in the industry ranging from designers, manufacturers, and distribution must be trained and equipped with perspective for sustainable production. However, one factor that is crucial as it determines the entire production procedure and the output of the product, designers, need to carefully plan and design the product so that its materials and production methods are environmentally friendly.

3. RETAILERS^[32]

As retailers closely related to industries, hence, there needs a new business model to support sustainable and healthy consumption such as a circular economy. Circular economy can be implemented in a way that these retailers are the go-to for industry when looking for recyclable materials and for consumers to cash in their unused recyclable

materials. The role of retailers can also be utilized to make a new pricing system to consider the environmental impact of a product. This can be assisted with cooperation between NGOs that are related to the environment or government so that it can be supported to also raise awareness in regards to the problem.

4. CONSUMERS^[33]

There are a couple ways in which this stakeholder can help with the problem in fast fashion industries. One of the ways is that consumers can change their behaviour to

make fast fashion industries sustainable by extending product use time (not throwing out usable clothes) and conscious consumption (not overconsuming, encouraging consumers

to make necessary purchases). However, changing consumer behaviour requires cooperation between other stakeholders such as NGOs, government, businesses, and

retailers to guide and shift the changes for a more sustainable fast fashion industry. Regardless of that, consumers play a big role and can be utilized for better solutions.

QUESTIONS A RESOLUTION MUST ANSWER

1. What are other environmentally-friendly and sustainable business models that the fast fashion industry can adopt to reduce the climate impacts that it causes?
2. How can UNEP collaborate with the other agencies/ bodies within the UN system to catalyze the sustainable consumption and production of the fast-fashion industry?
3. What are the mechanisms to provide incentives for the cooperation to sustain the environmentally-sound practices of circular economy in the fast-fashion industry in order to increase innovation?
4. How can governmental bodies ensure that the negative climate impacts of the fast fashion industry can be reduced worldwide and not just in their own country?
5. How can science be incorporated into reducing the climate impacts of the fast fashion industry?

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